



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,082	08/20/2001	Akira Ebihara	KANEBO CASE5	4908

7590 06/23/2003  
Flynn Thiel Boutell & Tanis  
2026 Rambling Road  
Kalamazoo, MI 49008-1699

EXAMINER

JUSKA, CHERYL ANN

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 06/23/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/806,082

Applicant(s)

EBIHARA ET AL.

Examiner

Cheryl Juska

Art Unit

1771

-- **Th MAILING DATE** of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other:  |

### DETAILED ACTION

1. Applicant claims a polishing tape for polishing the surface of a substrate of a magnetic recording medium. The polishing tape may be a woven, nonwoven, or flocked fabric and is made from a splittable composite fiber consisting of a nylon component and a dissolving component.

In the flocked fabric embodiment, the nylon component of the composite fiber is employed as the flock pile, wherein 80% or more of said flock pile has a fineness of less than 0.3 denier. Additionally, the flock pile has a pile density of 100-200 g/m<sup>2</sup> and a pile height of 0.2-1.0 mm. The flocked fabric has a tensile strength of not less than 25 kgf/50 mm and a tensile elongation on not more than 5 %/5 kg/50 m.

In the woven fabric embodiment, said fabric has a total of the sum of the warp cover factor and the weft cover factor within the range of 2000-4500. The weft comprises a yarn made from the splittable nylon composite fiber, wherein 80% or more of said yarn has a denier of less than 0.3. The warp is made of a multifilament yarn of nylon or polyester fibers, wherein said yarn has a denier of not more than 5.

In the nonwoven embodiment, the splittable nylon composite fiber having 80% or more fibers of less than 0.3 denier and having a fiber length of 20-120 mm is made into a nonwoven web.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 3 is rejected under 35 USC 102(b) as being anticipated by US 5,877,098 issued to Tanaka et al.

Tanaka discloses an abrasive sheet for polishing magnetic recording medium, wherein said sheet is a nonwoven fabric made of very fine and ultrafine fibers (abstract and col. 1, lines 6-10). The nonwoven fabric is an entangled nonwoven or a melt-blown nonwoven that comprises 80% or more of fibers having a diameter of 10 microns or less (col. 1, line 65-col. 2, line 4). The fiber diameter is preferably less than 8 microns, more preferably less than 6 micron, and most preferably less than 1 micron (col. 3, lines 29-48). The nonwoven is preferably a mix of very fine fibers (i.e., 1-5 microns) and ultrafine fibers (i.e., less than 0.8 microns) (col. 3, lines 49-65). Said very fine and ultrafine fibers may be obtained from splittable composite fibers which are mechanically and/or chemically divided into individual fine fibers (col. 3, line 66-col. 4, line 11). For example, the fibers may be obtained from an island-in-the-sea type fiber wherein the one component (i.e., sea) is dissolvable by a solvent (col. 4, lines 12-40). The preferred fiber is made of polyamide or nylon resin, but polypropylene and polyester may also be employed (col. 5, lines 35-61). When the nonwoven is made by carding or air-laying processes, the fiber length is 20-100 mm (col. 8, lines 34-37).

Art Unit: 1771

When the fiber is made of nylon, which has a density of approximately  $1.1 \text{ g/cm}^3$ , the denier of an approximately circular cross-section fiber having a diameter of 10 micron or less is calculated to be about 0.8. For polyester fibers having a density of about  $1.4 \text{ g/cm}^3$  and polypropylene fibers having a density of about  $0.9 \text{ g/cm}^3$ , the calculated denier of a 10 micron diameter fiber is approximately 1.0 and 0.6 denier, respectively. Thus, claim 3 is rejected as being anticipated by Tanaka.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 USC 103(a) as being unpatentable over US 5,899,794 issued to Shige et al. in view of the cited Tanaka.

Shige teaches a polishing tape for a magnetic recording disc made of fibers having a fineness of not more than 0.1 denier (abstract). Shige teaches said tape may be a woven fabric, nonwoven fabric, or flocked fabric (col. 3, lines 34-41 and Table 1). The fiber may be polyester or nylon (Table 1). Thus, Shige teaches employing nylon fibers having a denier of less than 0.1 in a woven, nonwoven, or flocked polishing tape, but fails to teach the presently claimed nylon fiber made from a splittable composite fiber.

The present limitation that the nylon fiber is produced from the splittable composite fiber by dissolution of one component is not necessarily given patentable weight, since applicant is

Art Unit: 1771

claiming the final product of a nylon filament, rather than the composite filament. In the event that said limitation is given patentable weight, it would have been obvious to one skilled in the art to employ the nylon fiber of Tanaka in the Shige polishing tape since it has been held to be within the general skill of a worker in the art to select a known material on the basis of suitability for the intended use. *In re Leshin*, 125 USPQ 416.

With respect to the claim limitation to cover factor, it would have been obvious to one having ordinary skill in the art to select a cover factor within the range claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to the limitation that the warp yarns are of nylon or polyester having a denier of less than 5, it is asserted that Shige's teaching of a woven fabric that employs 100% polyester and/or nylon fibers having a denier of 0.1 or less in both the warp and weft directions meets this limitation. Therefore, claim 2 is rejected as being obvious over the cited prior art.

6. Claim 2 is rejected under 35 USC 103(a) as being unpatentable over JP 11-203667 issued to Yokoyama et al. in view of the cited Tanaka.

Yokoyama teaches a polishing tape for a magnetic recording disc made of 70% or more of fibers having a fineness of not more than 0.5 denier (abstract). Yokoyama teaches said tape is a woven fabric of nylon, polyester, or polypropylene fibers (translation, section [0008]). The fabric may be woven with the same yarns in both warp and weft and may have a "five-sheet" satin weave, wherein the face of the fabric comprises 80% of weft yarns (section [0010]). Yokoyama fails to teach the presently claimed nylon fiber made from a splittable composite fiber.

Art Unit: 1771

The present limitation that the nylon fiber is produced from the splittable composite fiber by dissolution of one component is not necessarily given patentable weight, since applicant is claiming the final product of a nylon filament, rather than the composite filament. In the event that said limitation is given patentable weight, it would have been obvious to one skilled in the art to employ the nylon fiber of Tanaka as the nylon fiber of Yokoyama since it has been held to be within the general skill of a worker in the art to select a known material on the basis of suitability for the intended use. *In re Leshin*, 125 USPQ 416.

With respect to the claim limitation to cover factor, it would have been obvious to one having ordinary skill in the art to select a cover factor within the range claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, claim 2 is rejected as being obvious over the cited prior art.

7. Claim 1 is rejected under 35 USC 103(a) as being unpatentable over US 5,899,794 issued to Shige et al. in view of the cited Tanaka and in further view of WO 99/10569 issued to Tani et al.

As noted above, Shige teaches flocked polishing tapes made of flock fibers having a denier of less than 0.1 (col. 3, lines 39-41). It would have been obvious to one skilled in the art to employ the nylon fiber of Tanaka in the Shige polishing tape since it has been held to be within the general skill of a worker in the art to select a known material on the basis of suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Neither Shige or Tanaka teach a flock fiber length. However, the claimed pile length of 0.2-1.0 mm is well known in the art of flocked fabrics. For example, Tani teaches a flocked

Art Unit: 1771

polishing tape having a pile height of less than 1 mm (page 4, section [0009]). Thus, it would have been obvious to one skilled in the art to employ a flock length as taught by Tani in the flocked fabric of Shige with the expectation of obtaining a flocked fabric suitable for polishing a magnetic disc.

The cited prior art fails to teach a pile density as presently claimed. However, it would have been obvious to one having ordinary skill in the art to select a pile density within the range claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to the claim limitations tensile strength and tensile elongation, it is asserted that these properties would be met by the flocked polishing tape as taught by the combination of cited references. Support for this assertion is found in the use of like materials (i.e., nylon fibers having a denier of less than 0.1 and a pile length of less than 1.0 mm. The burden is upon applicant to prove otherwise. Therefore, claim 1 is rejected as being obvious over the cited prior art.

### ***Conclusion***

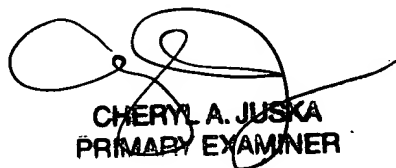
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Cheryl Juska whose telephone number is 703-305-4472. The Examiner can normally be reached on Monday-Friday 10am-6pm.

Art Unit: 1771

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



CHERYL A. JUSKA  
PRIMARY EXAMINER

cj  
June 16, 2003